

CLAIMS

What is claimed is:

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1. A sealing method for at least one semiconductor device on a first side of a wafer substrate, the wafer substrate having a first side, a second side, and a thickness, the at least one semiconductor device having a plurality of sides and at least one bond pad thereon, said sealing method comprising:

reducing the thickness of at least a portion of the wafer substrate from the second side thereof;

coating the first side of the wafer substrate using a first coating to substantially seal the at least one semiconductor device formed on the first side of the wafer substrate;

removing a portion of the wafer substrate from each side of the at least one semiconductor device formed on the first side of the wafer substrate, the portion of the wafer substrate being removed extending from the second side of the wafer substrate to the coating on the first side of the wafer substrate;

coating the second side of the wafer substrate using a second coating to substantially seal the second side of the wafer substrate and to substantially seal the plurality of sides of the at least one semiconductor device;

removing a portion of the first coating on the first side of the wafer substrate for uncovering a portion of the at least one bond pad located on the at least one semiconductor device; and

applying a third coating to the at least one bond pad of the at least one semiconductor device, the third coating substantially sealingly engaging the at least one bond pad and substantially sealing the first coating.

2. The method of claim 1, further comprising:

removing a portion of the third coating adjacent the at least one bond pad of the at least one semiconductor device.

3. The method of claim 1, further comprising:

separating the at least one semiconductor device from the wafer substrate.

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4. The method of claim 1, further comprising:
separating the at least one semiconductor device from the wafer substrate by removing a portion
of the second coating.

5. The method of claim 1, further comprising:
separating the at least one semiconductor device from the wafer substrate by removing a portion
of the second coating and removing a portion of the first coating.

6. A sealing method for at least one semiconductor device on a first side of a wafer
substrate, the wafer substrate having a first side, a second side, and a thickness, the at least one
semiconductor device having a plurality of sides and at least one bond pad thereon, said sealing
method comprising:
coating the first side of the wafer substrate with a first coating to substantially seal the at least
one semiconductor device formed on the first side of the wafer substrate;
reducing the thickness of at least a portion of the wafer substrate from the second side thereof by
thinning the wafer substrate in at least the portion of the wafer substrate located on said
at least one semiconductor device;
removing a portion of the wafer substrate from each side of the at least one semiconductor
device formed on the wafer substrate by removing a portion of the wafer substrate
extending through the thickness thereof; and
coating the second side of the wafer substrate with a second coating.

7. The method of claim 6, wherein the second coating comprises a resist coating.

8. The method of claim 7, wherein the removing the portion of the wafer substrate
includes:
etching the wafer substrate from each side of the plurality of sides of the at least one
semiconductor device formed on the wafer substrate, the portion of the wafer substrate
removed from said each side of the plurality of sides of the at least one semiconductor

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device substantially extending from the second side of the wafer substrate to substantially the first coating on the first side of the wafer substrate through the thickness thereof.

9. The method of claim 8, further comprising:
removing the second coating of resist from the second side of the wafer substrate.

10. The method of claim 9, further comprising:
applying a third coating to the second side of the wafer substrate.

11. The method of claim 10, wherein the third coating is a coating of glass.

12. The method of claim 11, further comprising:
applying a fourth coating of resist to the first side of the wafer substrate.

13. The method of claim 12, further comprising:
etching substantially the first coating on the first side of the wafer substrate in selected areas of the wafer substrate.

14. The method of claim 13, further comprising:
removing the fourth coating of resist on the first side of the wafer substrate after etching of the first coating on the first side of the wafer substrate.

15. The method of claim 14, further comprising:
applying a fifth coating to the first side of the wafer substrate.

16. The method of claim 15, wherein the fifth coating comprises a metal coating.

17. The method of claim 16, further comprising:
applying a sixth coating to the first side of the wafer substrate.

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18. The method of claim 17, wherein the sixth coating is a resist.

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19. The method of claim 18, further comprising:
etching portions of the fifth coating on the first side of the wafer substrate leaving portions of the fifth coating remaining on the first side of the wafer substrate in predetermined areas of the wafer substrate.

20. The method of claim 19, further comprising:
removing substantially the sixth coating from the first side of the wafer substrate uncovering predetermined remaining portions of the fifth coating on the first side of the wafer substrate.

21. The method of claim 20, further comprising:
dividing the wafer substrate into semiconductor devices.

22. The method of claim 21, wherein dividing the wafer substrate comprises:
sawing the wafer substrate into semiconductor devices.

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